

WHAT IS CLAIMED IS:

1 1. A method for forming a second access penetration in a wall of a
2 body lumen having a first access penetration in said wall, said method comprising:
3 introducing a penetrating device inwardly through the first access
4 penetration into the body lumen;
5 positioning a penetrating element of the penetrating device at a target site
6 in the lumen; and
7 advancing the penetrating element outwardly through the wall of the
8 lumen and overlying tissue to form the second access penetration.

1 2. A method as in claim 1, wherein introducing the penetrating device
2 comprises introducing a catheter having a lumen therethrough to the target site and
3 pushing the penetrating device from the catheter, wherein the penetrating element deflects
4 laterally so that it passes through the wall as it is advanced.

1 3. A method as in claim 2, further comprising rotating the penetrating
2 device to aim the penetrating element prior to pushing the penetrating device from the
3 catheter.

1 4. A method as in claim 3, further comprising viewing a marker on
2 the catheter and/or penetrating device while the device is being rotated to determine when
3 the penetrating device is properly aimed.

1 5. A method as in claim 2, further comprising anchoring or stiffening
2 at least a portion of the catheter as the penetrating device is pushed from the catheter.

1 6. A method as in any of claims 1 to 5, wherein the penetrating device
2 comprises a guide tube having a lumen therethrough and the penetrating device within the
3 lumen, further comprising removing the penetrating element from the guide tube after the
4 second access penetration has been formed, whereby the guide tube lumen provides a
5 path between the first access penetration and the second access penetration.

1 7. A method as in claim 6, further comprising passing a guidewire
2 through the lumen of the guide tube and withdrawing the guide tube to leave the
3 guidewire in place.

1 8. A method as in any of claims 1 to 5, wherein the body lumen is a
2 blood vessel.

1 9. A method as in claim 8, wherein the blood vessel is selected from
2 the group consisting of arteries, veins, autologous grafts, artificial grafts, and arterio-
3 venous fistulas.

1 10. A method for positioning a guidewire in a body lumen, said
2 method comprising:
3 positioning a guide tube between a first access penetration and a second
4 access penetration into the body lumen;
5 passing a guidewire through the guide tube, and
6 withdrawing the guide tube to leave the guidewire in place.

1 11. A method as in claim 10, wherein the body lumen is a blood vessel.

1 12. A method as in claim 11, wherein the blood vessel is selected from
2 the group consisting of arteries, veins, autologous grafts, artificial grafts, and arterio-
3 venous fistulas.

1 13. A method as in any of claims 10 to 12, wherein positioning the
2 guide tube comprises introducing a penetrating device comprising the guide tube and a
3 penetrating element through the first access penetration, positioning the penetrating
4 element of the penetrating device at a target site, advancing the penetrating element
5 outwardly through the wall to form the second access penetration and position the guide
6 tube therein, and withdraw the penetrating element from the guide tube to leave a lumen
7 for receiving the guidewire.

1 14. A method as in claim 13, wherein positioning the guide tube
2 further comprises introducing a catheter having a lumen therethrough to the target site
3 and pushing the penetrating device from the catheter, wherein the penetrating element
4 deflects laterally through the wall as it is advanced.

1 15. A method as in claim 14, further comprising rotating the
2 penetrating device to aim the penetrating element prior to pushing the penetrating device
3 from the catheter.

1 16. A method as in claim 15, further comprising anchoring or
2 stiffening at least a portion of the catheter as the penetrating device is pushed from the
3 catheter.

1 17. A method as in any of claims 10 to 12, further comprising
2 introducing at least one device over the guidewire through one of the first and second
3 access penetrations after the guide tube has been withdrawn.

1 18. A method as in claim 17, wherein a second device is introduced
2 over the guidewire simultaneously through the other of the access penetrations.

1 19. A method for intervening at a target site in a body lumen, said
2 method comprising:

3 positioning a guidewire between a first access penetration and a second
4 access penetration into the body lumen;

5 introducing a first device through the first access location over the
6 guidewire to the target site;

7 introducing a second device through the second access location over the
8 guidewire to the target site; and

9 intervening at the target site using at least one of the devices.

1 20. A method as in claim 19, wherein the body lumen is a blood vessel.

1 21. A method as in claim 20, wherein the blood vessel is selected from
2 the group consisting of arteries, veins, autologous grafts, artificial grafts, and arterio-
3 venous fistulas.

1 22. A method as in any of claims 19 to 21, wherein intervening
2 comprises using both devices.

1 23. A method as in claim 22, wherein intervening comprises imaging
2 with at least one of the devices.

1 24. A method as in claim 22, wherein intervening comprises deploying
2 an occluding element from at least one of the devices.

1 25. A method as in claim 24, wherein intervening comprises deploying
2 an occluding element from both of the devices to define an isolated region therebetween.

1 26. A method as in claim 22, wherein intervening comprises disrupting
2 material within the body lumen with one device and collecting the dislodged material
3 with the other device.

1 27. A method as in claim 19, wherein intervening at the target site
2 comprises using at least one device to perform angioplasty, atherectomy, aspiration,
3 filtering, infusion, mechanical thrombectomy, endarterectomy, luminal prosthesis
4 placement, lysis, or thrombolysis.

1 28. A method as in claim 19, wherein positioning the guidewire
2 comprises:
3 positioning a guide tube between the first access penetration and the
4 second access penetration into the body lumen;
5 passing the guidewire through the guide tube; and
6 removing the guide tube to leave the guidewire in place.

1 29. A method as in claim 28, wherein positioning the guide tube
2 comprises introducing a penetrating device comprising the guide tube and a penetrating
3 element through the first access penetration, positioning the penetrating element of the
4 penetrating device at a target site, advancing the penetrating element outwardly through
5 the wall to form the second access penetration and position the guide tube therein, and
6 withdraw the penetrating element from the guide tube to leave a lumen for receiving the
7 guidewire.

1 30. A method as in claim 29, wherein positioning the guide tube
2 further comprises introducing a catheter having a lumen therethrough to the target site
3 and pushing the penetrating device from the catheter, wherein the penetrating element
4 deflects laterally through the wall as it is advanced.

1 31. A method as in claim 30, further comprising rotating the
2 penetrating device to aim the penetrating element prior to pushing the penetrating device
3 from the catheter.

1 32. A method as in claim 30, further comprising anchoring a distal end
2 of the catheter as the penetrating device is pushed from the catheter.

1 33. A device for positioning a filament in a body lumen, said device
2 comprising:

3 a catheter which can be introduced through a first access penetration into
4 the body lumen; and

5 means advancable from the catheter for creating a second access
6 penetration and providing a filament path between said first and second access
7 penetrations.

1 34. A device as in claim 33, wherein the catheter has at least one lumen
2 therethrough and the advancable means is reciprocatably received in the catheter lumen.

1 35. A device as in claim 34, wherein the advancable means has a pre-
2 formed tip which deflects laterally as it is advanced from the catheter.

1 36. A device as in any of claims 33 to 35, wherein the advancable
2 means comprises a guide tube having a lumen therethrough and a penetrating element
3 removable received in the lumen and extending from a distal tip of the guide tube,
4 wherein the penetrating means can be withdrawn from the guide tube after the guide tube
5 has been placed between the access penetrations to leave the guide tube lumen as the
6 filament path.

1 37. A device as in claim 36, wherein the penetrating element is a stylet.

1 38. A device as in any of claims 33 to 35, further comprising an
2 expandable anchor disposed over at least a portion of the catheter.

1 39. A device as in claim 36, further comprising a support tube having a
2 lumen for receiving the guide tube therethrough.

1 40. A kit comprising:
2 a penetrating device having a penetrating element, and
3 instructions for use according to any of claims 1 to 5.

- 1 41. A kit comprising:
- 2 a guide tube; and
- 3 instructions for use according to any of claims 10 to 12.